OBSERVATIONS AT HABANA, CUBA.

Through the kindness of the Director of the Belen Observatory, Rev. L. Gangoiti, the observations made at that station at 1 p. m., Greenwich mean time, or 8 a. m., seventy-fifth meridian time, are communicated to the Weather Bureau promptly by mail, and are herewith published for general use. The position of the observatory is N. 23° 8′ 14″, W. 76° 9′ 42″, from San Fernando, or 69° 57′ west from Greenwich; altitude of the barometer 24.347 meters (79.7 feet); the barometric readings have been reduced to sea level and converted into English measures by the Director. The correction for local gravity has not been applied; so far as it concerns latitude, the correction for 30 inches of mercury is —0.054 inch. The clouds are observed with much minuteness; two kinds are frequently recorded under the general headings "upper" or "lower"; in these cases the two kinds are printed in the accompanying table in the same column but separated by a semicolon; their respective directions are also separated by a semicolon. The rainfall is given for the twenty-four hours ending with 1 p. m., Greenwich time. Most of these observations seem to be read off from the records of the Secchi meteorograph, but the directions of the clouds have apparently been observed accurately by the use of the reflecting nephoscope. The kinds of clouds are indicated in the accompanying table, by the same letters as those used in the original manuscript, which undoubtedly agree with the following paragraph quoted from the annual volume published by the same observatory:

The clouds are classified as upper and lower; among the upper clouds the following are included, arranging them in the order of decreasing altitude from above downward, viz: *c*, cirrus; *ck*, cirro-cumulus; *cs*, cirro-stratus; *ka*, alto-cumulus. Among the lower clouds the following are included: *kb*, lower cumulus; *sk*, strato-cumulus; *s*, stratus, and *n*, nimbus. The false cirrus is not included; the lower cirro-cumulus is included with the alto-cumulus; the cumulo-nimbus is included with the strato-cumulus.

Meteorological data, Habana, Cuba, March, 1898.

Date.	Barometer reduced to sea level.	Temperature of air.	Relative humidity.	Wind.		Upper clouds.			Lower clouds.			Total rainfall.
				Direction.	Velocity.	Kind.	Am't.	Direction.	Kind.	Am't.	Direction.	
	Inches	°	%		*Miles*							*Inch*
1....	30.05	63.9	54	nne.	10	k	2	nne.	.....	0	....	0.06
2....	30.08	61.2	83	ne.	1	cs	F.	wsw.	.....	0	.....	0.00
3 ...	29.93	65.1	91	wsw.	15	.....	0	.....	n	10	.....	0.76
4....	30.04	73.9	76	wnw.	7	k	3	sw.	sk; s	7	wnw.	0.12
5....	30.21	68.2	67	n.	11	c; cs; k	1	sw.; n.	k; sk	5	nne.	0.02
6....	30.19	63.9	88	.....	0	cs	4	wsw.	k; sk	5	ene.; —	0.08
7 ...	30.11	65.3	83	.....	0	k	5	w.	k; sk, s	2	ene.; nne.	0.01
8....	30.01	64.4	84	ne.	1	cs; k	5	—; w.	sk	F.	.....	0.00
9....	30.00	66.7	87	e.	2	k	2	ne.	sk	1	.....	0.03
10....	30.06	64.6	82	.....	0	k	F.	nw.	k; sk	1	ene.; w.	0.00
11....	30.05	64.4	84	ne.	1	.....	0	.....	k; sk	F.	ene.; —	0.00
12....	30.03	71.4	77	e.	12	.....	0	.....	sk	F.	.....	0.00
13....	30.07	68.0	72	ene.	1	cs; k	2	nw.; ese.	k	F.	.....	0.00
14....	30.09	67.5	74	ese.	8	k	7	ese.	.....	0	.....	0.00
15....	30.13	67.1	81	e.	5	.....	0	.....	.....	0	....	0.00
16....	30.16	68.5	79	e.	4	.....	0	.....	k	F.	.....	0.00
17....	30.19	68.7	83	ne.	0	k	F.	ene.	sk	F.	.....	0.00
18....	30.20	69.8	75	ene.	2	.....	0	.....	k; sk	F.	ene.; —	0.00
19....	30.20	69.1	73	e.	6	cs	F.	.....	k; sk	F.	—; —	0.00
20....	30.21	70.5	70	e.	4	k	4	e.	.....	0	.....	0.00
21....	30.19	69.8	80	ene.	0	k	F.	.....	sk	F.	.....	0.00
22....	30.16	72.1	75	ene.	5	.....	0	....	....	0	.....	0.00
23....	30.14	72.5	73	ese.	8	k	F.	ese.	....	0	.....	0.00
24....	30.14	70.3	89	ene.	5	.....	0	.....	.....	0	.....	0.00
25....	30.18	72.7	76	e.	10	.....	0	.....	.....	0	.....	0.00
26....	30.22	71.1	77	e.	7	.....	0	.....	k	F.	ene.	0.00
27....	30.18	70.3	77	e.	1	.....	0	.....	k; sk	1	ene.	0.00
28....	30.15	73.4	72	ene.	8	.....	0	.....	k; sk	1	ese.; —	0.00
29....	30.13	72.0	68	e.	12	cs; k	1	nw.; —	sk	F.	.....	0.00
30....	30.13	68.9	71	e.	1	c; cs	1	wnw.	sk	F.	.....	0.00
31....	30.11	68.5	77	ese.	1	.....	0	.....	.....	0	.....	0.00
Sum.	.....	.....	....	.....	.....	.....	....	.....	.....	....	.....	1.08

OBSERVATIONS AT HONOLULU, REPUBLIC OF HAWAII.

Through the kind cooperation of Mr. Curtis J. Lyons, Meteorologist to the Government Survey, a copy of the daily record at Honolulu is communicated to the Weather Bureau in advance of its official publication, and is herewith printed, as a special contribution, for the convenience of those who are studying the relations of the storms and weather of the United States to those of adjacent countries, with a view to long-range, seasonal predictions.

Meteorological observations at Honolulu, Republic of Hawaii.

The station is at 21° 18′ N., 157° 50′ W.; altitude 50 feet.

Pressure is corrected for temperature and reduced to sea level, but the gravity correction, —0.06, is still to be applied.

The average direction and force of the wind and the average cloudiness for the whole day are given unless they have varied more than usual, in which case the extremes are given. The scale of wind force is 0 to 10. Two directions of wind, or values of wind force, connected by a dash, indicate change from one to the other.

The rainfall for twenty-four hours is given as measured at 6 a. m. on the respective dates.

MARCH, 1898.

March, 1898.	Pressure at sea level.			Temperature.					Relative humidity.			Wind.		Cloudiness.	Rain measured at 6 a. m.
	6 a. m.	3 p. m.	9 p. m.	6 a. m.	2 p. m.	9 p. m.	Maximum.	Minimum.	7 a. m.	2 p. m.	9 p. m.	Direction.	Force.		
	Ins.	*Ins.*	*Ins.*	°	°	°	°	°	%	%	%				*Ins.*
1.	30.00	29.93	29.96	60	72	62	73	60	84	57	84	n-w.	1	1-3	0.00
2.	30.03	29.97	30.13	60	74	66	74	60	79	30	57	n.	1-5	6-0	0.00
3.	30.20	30.13	30.22	65	71	68	73	65	61	40	60	nne.	6	3	0.00
4.	30.25	30.15	30.23	67	68	67	71	65	71	71	67	ne.	4	7	0.00
5.	30.17	30.10	30.15	66	71	68	73	64	71	60	67	ene.	3-5	6	0.02
6.	30.08	30.02	30.10	64	72	69	74	62	80	63	70	ne.	4	7	0.04
7.	30.08	30.04	30.12	64	73	69	74	61	76	59	72	ne.	4	7	0.17
8.	30.09	30.05	30.12	66	72	70	74	64	67	69	72	ene.	4	4	0.12
9	30.08	30.04	30.11	66	70	68	72	63	72	76	76	ne.	5	5	0.49
10.	30.08	30.04	30.10	66	69	69	74	64	78	76	76	ene.	5	8	0.35
11.	30.07	30.04	30.05	67	73	71	74	65	76	69	69	ene.	4-5	8-10	0.32
12.	30.04	30.00	30.01	69	68	71	71	66	82	78	77	ne.	1-6	10	0.08
13.	29.93	29.86	29.96	68	77	72	78	65	95	70	82	n-wsw.	1-3	5-2	1.07
14.	29.93	29.90	29.97	67	74	70	74	66	97	80	80	sw.	0-1	10	0.22
15.	29.98	29.90	30.00	70	76	70	77	69	95	78	93	s.	1-4	10	0.26
16.	29.94	29.89	29.96	70	76	73	77	67	90	83	93	se-s.	2-3	10-5	0.53
17.	29.96	29.90	30.00	71	74	72	76	70	90	90	90	sw.	2	8	0.13
18.	30.00	29.98	30.08	68	76	69	77	67	93	78	89	sse-sw.	3-1	6-10	0.04
19.	30.06	29.99	30.07	67	77	69	77	66	98	74	97	s-n.	1	6-10	0.33
20.	30.07	30.01	30.11	67	72	66	75	67	93	80	97	ne.	0-1	10	0.53
21.	30.07	30.04	30.09	67	73	70	75	65	93	69	79	ne.	0-1	10	2.35
22.	30.07	30.03	30.10	65	73	71	75	63	95	77	79	ne.	3	8	0.65
23.	30.05	30.00	30.06	69	73	71	74	69	89	74	77	ne.	4	10	0.17
24.	30.01	29.96	29.99	69	65	67	74	62	77	90	85	nw-ne.	0-3	10	0.27
25.	29.96	29.93	30.00	69	75	70	75	65	81	70	77	ne.	3	3-7	3.90
26.	29.99	29.95	30.03	69	74	70	77	69	82	74	85	ne-se.	3-2	5-10	0.10
27.	30.04	30.00	30.00	70	75	72	77	67	86	74	82	ene.	3	10-5	0.39
28.	30.09	30.06	30.11	70	73	72	75	70	86	72	71	ene.	5-6	10-8	0.04
29.	30.10	30.05	30.13	69	74	71	75	67	74	64	68	ne.	5	7-10	0.06
30.	30.13	30.06	30.17	69	71	71	73	69	68	71	68	ne.	5	10-6	0.08
31.	30.15	30.09	30.19	68	72	70	74	69	69	63	64	ne.	6	4-6	0.06
	30.05	30.00	30.08	67.1	73.0	69.5	74.6	65.2	82.5	70.3	77.5	.....	.....	.....	12.70

Mean temperature: 6+2+9+8 is 69.9°; extreme temperatures, 78° and 60°.

CUMULUS CLOUDS OVER A FIRE.

By R. DEC. WARD (dated April 1, 1898).

An interesting observation of the formation of small cumulus clouds over a fire was made by the writer on October 29 last, at the southern station of the Harvard College Observatory, at Arequipa, Peru (altitude 8,050 feet above sea level). At about 3:45 p. m. on that day there was observed behind the western flank of Mount Charchani (20,000 feet above sea level), and about 15 miles or so away, a column of smoke rising from a considerable fire of brushwood behind the mountain. The altitude above sea level of the fire was about 14,000 feet, judging by its relation to the height of the mountain. As the writer was looking at the smoke, which was rising to a considerable height, he noticed the formation of a small cumulus cloud directly over the smoke column, and approximately at a height of 17,000 or 18,000 feet above sea level, or 3,000 to 4,000 feet above the fire. The sky at this time was clear, except a trace of cirrus in the west and southwest. The wind at Arequipa was west about 15 miles an hour.

The cloud was only a fragment, and disappeared very soon, drifting to the southeast. It was succeeded by another small cumulus, which again disappeared within five minutes. The smoke column was ascending apparently near vertically, but its top was blown somewhat toward the southeast. Succes-